



Introduction

The single station DH300 precision polishing machine provides both research and production oriented establishments with a high quality, automated polishing facility. Wafers, lenses, mirrors, prisms or components consisting of a wide variety of different materials (up to a maximum of 300mm) can be polished with ease using the Logitech range of polishing cloths, plates and solutions.

Description

The process area consists of a 560mm (22") diameter polishing plate, a single motor driven, sweeping polishing head with a detachable wafer / component carrier and an integral polishing fluid feed system.

Polishing process parameters such as the plate speed, carrier speed, direction, down pressure and polishing fluid flow rate can all be set using the automated control panel. Each of these parameters can be selected, changed and saved using the control panel joystick. Situated to the front of the DH300, the control panel unit can be swivelled to either the left or right hand sides of the machine as desired. An umbilical link also allows the panel to be detached from the main body of the DH300 and moved to a distance of 2m (6.56ft) away.

The polishing plate and wafer / component carrier can both be programmed to rotate in clockwise or anti-clockwise directions independently and at speeds of up to 160rpm and 125rpm respectively. This allows a wide variety of individual polishing techniques to be catered for whilst making use of the Logitech polishing plate, cloth and fluid range

DH300

Driven Head Precision Polishing Machine

- Single motor driven sweeping polishing head
- Variable plate speed (0-160rpm)
- Plate diameter of 560mm (22")
- Process 1 x 300mm or 12 x 2"Ø wafers
- SiC, GaN, AlN, Sapphire, Nd:YAG

to produce repeatable process results.

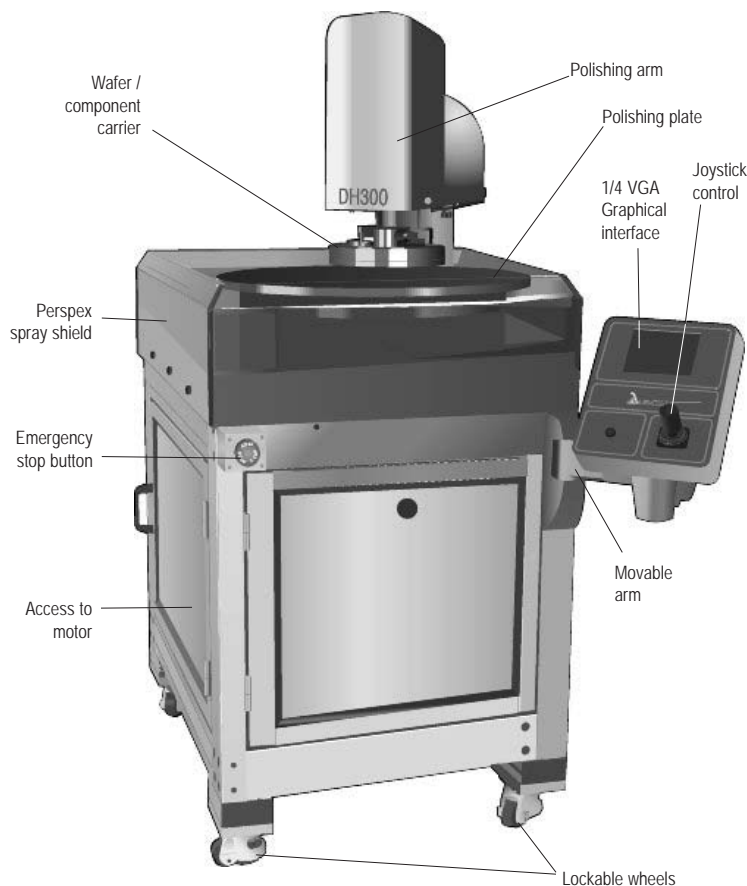
The polishing arm can also be programmed to sweep the wafer / component carrier across the polishing plate surface. The level of sweep can be controlled from the control panel, as can the level of down force exerted on the carrier (1-5psi sample pressure). This combination of sweep and down force allows particularly hard optical materials such as sapphire and silicon carbide, to be polished with ease.

Loading and unloading of the carrier arm is again controlled from the control panel and no heavy lifting is required as the carrier simply clicks into place.

The polishing solution feed system is regulated from the automated control panel and brings fluid through a peristaltic pump to the polishing plate. This system ensures a continuous supply of polishing fluid throughout the polishing process.

Applications

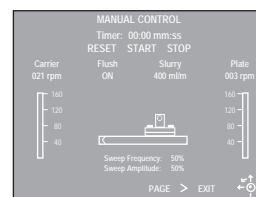
The DH300 can be used for polishing wafers, prisms, mirrors, lenses or components of virtually any optical or semiconductor material. Automated controls and independently adjustable process parameters make this single station unit ideal for those seeking to quickly polish wafers to an epitaxy ready surface. This versatility is heightened by the unit's ability to work with wafers / components of differing diameters and up to a maximum of 300mm.



The Automated Control Panel:

From this control screen it is possible to set the following process parameters:

- Plate & carrier rotation speed
- Polishing solution feed rate
- Carrier Sweep
- Start / stop the polishing process



From the second control screen it is possible to set the following process parameters:

- Plate rotational direction
- Carrier rotational direction
- Carrier down pressure



Polishing Templates:

A variety of different templates are available to suit individual requirements. The carrier head has a lightweight removable baseplate for fixing templates to as shown on the right.

Each template allows wafers / components to be held securely throughout the polishing process and work equally well with multiple groupings of wafers / components (see right) or single large diameter wafers up to 300mm.



Specifications:

Power supply:	Single Phase 220-230V
Fuse rating:	13A
Plate speed:	0-160rpm
Plate direction:	Clockwise & counter clockwise
Plate size:	560mm (22")
Carrier speed:	125rpm
Carrier direction:	Clockwise & counter clockwise
Machine capacity:	12 x 2" wafers per run
Height:	1800mm
Width:	700mm
Depth:	950mm

Ordering Data:

1DH31	DH300 Driven Head Precision Polishing Machine (220-230V)
1DHS1-0100	Standard complete wafer / component carrier
1DHS1-0200	Carrier plate for the wafer / component carrier
1DHS1-0300	Standard sample polishing template (12 x 2"Ø wafers)



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